What next for warmer homes?

Towards a retrofit programme which delivers for UK households

November 2026

In September 2026, the Chartered Institute of Architectural Technologists (CIAT) brought together leading parliamentarians and sector experts at an invitation-only roundtable, to explore how the UK can deliver healthier, more sustainable homes, both through the successful implementation of the current Warm Homes Plan, and through potential successor schemes.

Attendees were invited to consider two key questions:

1. **What further policy and delivery support will be needed to enable the Government's Warm Homes Plan to succeed in lowering heating costs and improving comfort and sustainability across five million homes in this parliament?**
2. **How should ambitions for a national retrofit strategy evolve beyond 2030?**

Key themes arising from the roundtable, with relevance for both the current Warm Homes Plan and future retrofit programmes, included:

- The importance of putting consumers at the centre of retrofit works and rebuilding trust and confidence following recent high-profile scheme failures.
- The need for robust competence standards for individuals involved in delivering retrofit assessment, design and installation, and the importance of holding appropriate insurance.
- The challenge of balancing delivery at scale with holistic, tailored retrofits which consider the unique needs of the building and its users.
- The potential of retrofit to deliver job opportunities and economic growth across the UK.
- The role of data in informing retrofits, and how this should be managed.
- The value of moving from a narrow focus on warm and heating costs towards a holistic view of home quality.

This report explores these themes in greater detail. However, no individual point necessarily represents the views of specific roundtable participants or the organisations they represent.

CIAT is grateful to Lee Dillon MP for sponsoring the roundtable, and to all those who supported or participated in the roundtable.

NOTE: The 2026 Autumn Budget reallocated at least £1 billion of Warm Homes Plan funding to other spending priorities. Reductions are expected to primarily effect the Boiler Upgrade Scheme and Warm Homes Fund elements of the Warm Homes Plan, but full details have yet to be confirmed. This paper therefore quotes pre-budget allocations. Revised spending allocations do not alter the paper's key points.

Understanding the Warm Homes Plan

The UK's homes are some of the oldest and least efficient in Europe. Two thirds of UK households live in draughty, damp or overheated homes,[1] while overheating risks are also increasing. The total cost of ill health associated with poor housing has been estimated to be as high as £2.5 billion per year.[2] Emissions from running our homes also account for around 12% of UK carbon emissions.[3] As such, there is a clear need for coordinated action to improve the quality, sustainability, affordability and comfort of the UK's homes and buildings.

The Government has committed to upgrading five million homes in England over the course of this parliament, through a combination of strengthened regulatory requirements for private and social rented homes and direct support for new retrofit measures, delivered through the Warm Homes Plan, and underpinned by £14.7 billion of funding (though not all of this is new money).

Key elements of the Plan include £4.4 billion in targeted grants for low-income households (currently delivered through the Warm Homes: Local grant and Warm Homes: Social Housing Fund), £2.7 billion in universal grants for new heating systems through the Boiler Upgrade Scheme, a broad-based Warm Homes Fund, distributing £5 billion as loans and grants (due to launch in 2027), and £1.1 billion to support the roll out of heat networks. Alongside this, a new Warm Homes Agency will launch in 2027, to provide coordination and support for consumers.

The Warm Homes Plan has clear potential to deliver significant improvements to the UK's housing stock. However, the roundtable identified a range of areas in which local and national government, the retrofit sector, and others will need to coordinate and collaborate, to ensure that this potential is fully realised.

Learning from previous schemes

The first challenge which the Warm Homes Plan will need to overcome is inherently linked to its scale and ambition. Any large programme, delivered at pace, is at risk of quality issues. Attendees emphasised the negative impacts of poor-quality solid wall installations funded through the Great British Insulation Scheme (GBIS) and the fourth wave of the Energy Company Obligation (ECO 4). Under these programmes, failures in programme design, set-up, consumer protection and quality assurance systems led to significant quality issues. An audit of 758 properties conducted by the National Audit Office found that 98% of external wall insulation measures and 29% of internal wall insulation measures installed through ECO 4 and GBIS have major issues requiring remediation, such as water ingress, condensation and mould; a small percentage of those installations created more serious risks, such as to ventilation and electrical safety.[4] Nor are problems limited to solid wall insulation delivered through ECO 4 and GIBS. Poor-quality installation of spray-foam insulation funded through the Green Homes Grant has caused damp and, in some cases, structural issues, while inadequate design of heat-pump systems has left some consumers with homes which are both colder and more expensive to run compared to previous gas central heating systems.

The impacts of these failures have been significant. Consumers been left funding remediation works which can cost £100s or £1000s, and dealing with damp or other quality issues, while some have seen health conditions exacerbated. Participants noted that this has eroded public confidence in the retrofit sector. Consumers are understandably reluctant to pay for expensive retrofit programmes, when installation will be disruptive, and may leave them with a home which is materially worse than it was before.

If it is to be successful in achieving widespread improvements in the quality of homes in England the Warm Homes Plan will need to

[1] Energy Security and Net Zero Committee, *Retrofitting homes for net zero* (May 2025).
[2] Institute of Health Equity, *Fuel Poverty, Cold Homes and Health Inequalities in the UK* (2022).
[3] Climate Change Committee, *Seventh Carbon Budget* (2025).
[4] National Audit Office, *Energy efficiency Installations under the Energy Company Obligation* (October 2025).

learn from these failures and tackle quality issues head on. It will need to ensure that it achieves, and is seen to achieve, a step change in oversight and outcomes, so that retrofit options are seen as worthwhile by consumers.

Quality by design

The problems identified with ECO 4 and GBIS have resulted in the decision to launch new programmes, rather than renewing or extending these models. The new Warm Homes: Local Grant is largely filling the role of those two schemes, with some 11,250 measures delivered as of July 2026.[5] This programme will be augmented by the Warm Homes Fund, when that launches in 2027.

Unlike the ECO 4 scheme the Warm Homes: Local Grant is administered locally, which can allow for closer oversight, which was welcomed by roundtable participants.

Under ECO 4 installers often identified houses directly, which allowed for gamification, with installers favouring more profitable measures even where they failed to deliver the best outcomes, and for coordination between assessors and installers, undermining quality assurance. Local administration has the potential to deliver clearer separation between assessment, design and installation, which could help prevent such gaming of the system. However, this will depend on robust governance, oversight and quality assurance, including verification of individual installations by independent professionals.

Additionally, the greater scale of the Plan could allow for systematic outcomes monitoring and post-occupancy evaluation at scale. This was identified as a key gap in previous programmes, and could be coordinated by the Warm Homes Agency, enabling timely identification and resolution of quality issues, as well as continuous improvement in practice.

Unique homes, scalable approaches

One key mechanism to improve quality is to consistently apply robust standards and frameworks to retrofits delivered through these schemes. Attendees identified *PAS 2035 – Retrofitting Dwellings for improved Energy Efficiency,* which provides a framework for holistic, risk-based retrofit assessment, design, installation and assessment, and *PAS 2030 – Installation of Energy Efficiency Measures in Existing Dwellings,* which addresses appropriate installation of individual measures, as the most important such frameworks. These should be complemented by specific standards, including *BS 40101 – Building performance evaluation*, *BS 40104 – Retrofit assessment for domestic dwellings,* and the RICS *Residential Retrofit Standard* (designed to support surveying professionals), where appropriate.

Importantly, these standards emphasise the need for individual, holistic assessments of properties, recognising that every home and household is different. Participants noted that a standardised, one-size-fits-all approach or rigid checklist will not deliver the best outcomes. Instead, each retrofit must be based on understanding the distinct needs and challenges of a particular building and its occupants. This will allow the design and coordination of the best retrofit possible within the constraints of available finances, consumer requirements and confidence, and practical requirements.

For example, for some houses, delivering solid-wall insulation may be the option that will make the greatest difference, but it may be necessary to install lower cost, smaller scale or less invasive measures first, such as double or triple glazing, loft insulation, or rooftop solar panels. This can build consumer confidence, allowing for further retrofit works at a later stage. It was suggested that reforms to permitted development rights and building regulations could support the delivery of light-touch measures, such as external shading, at scale. Good retrofit design should consider both immediate works and the potential for future changes to meet evolving needs, as part of a design approach rooted in making the best use of buildings over the long term.

At the same time, participants recognised that many retrofit measures could deliver greater efficiencies when installed at scale, which sits in tension with the need for tailored approaches. This means that the best

[5] DESNZ, *Warm Homes: Local Grant statistics - August 2026* https://www.gov.uk/government/statistics/warm-homes-local-grant-statistics-august-2026/warm-homes-local-grant-statistics-august-2026.

outcomes are likely to be achieved by working at the level of, for example, a single terrace (where it may be appropriate to deliver a single insulation solution across multiple properties with similar fabric), or multi-property building (which could benefit from a shared heat network). Retrofit professionals should work with local government, the third sector and communities to ensure that retrofit programmes are designed and delivered to make the best use of resources and support people, places and communities.

Skills, competence and professionalism

Standards provide a crucial foundation on which to build, but when every project and household is unique, genuine quality is highly dependent on the actions of the individuals involved in the project, from assessment and design to coordination and installation. These professionals and tradespeople must have the skills, knowledge, experience and behaviours to work to high standards and deliver good outcomes for households.

Attendees noted that many of the individuals involved in the retrofit sector are not members of professional institutions such as CIAT, RICS or RIBA. This means that these individuals are not subject to the same competence requirements, nor are they required to undertake regular CPD or maintain adequate insurance. This creates an uneven playing field, which distorts competition, undermines quality and can leave customers without strong protections when things go wrong. This contrasts with areas such as gas works, where Gas Safe Registration is required, and sets various criteria for qualification and maintenance of competence.

A key mechanism to strengthen quality in the retrofit market, proposed by participants, would be to set minimum training, CPD and Insurance requirements for anyone delivering work funded through Warm Homes Plan schemes. This would likely include Professional Indemnity Insurance (PII) for assessors, designers and coordinators who are providing professional advice or design services, and for installers, public liability, employers' liability, and workmanship guarantees. TrustMark registration is already a common requirement, and this registration process could provide a touch point to verify that wider requirements are also being appropriately met. Oversight must also be proportionate to risk, with a new registrant subject to more stringent oversight than an established professional with a track-record of quality.

While this may lead to longer timelines for TrustMark registration, a slower, more robust process is likely to lead to better quality outcomes, reduced need for subsequent remediation and therefore, faster overall progress to the key policy goals of housing quality improvement, cost reduction and decarbonisation of homes.

The growth of the retrofit market over the coming years and decades was identified as both a challenge and an opportunity. An estimated 120,000-230,000 more construction and retrofit professionals will be needed by 2030.[6] Without robust oversight, this growing workforce demand could result in individuals taking on work for which they are not competent, undermining quality and trust.

Conversely, these are likely to be skilled, well-paid jobs, distributed across the UK. Long-term funding and consistent demand will enable industry to invest in both retraining people with relevant skills, who are working in sectors which may be less needed in future (such as in the oil and gas industry) and in supporting new entrants to the jobs market. The retrofit market could therefore contribute to addressing the challenge of high rates of younger people not in education, employment or training (NEETs). New routes into the profession must be robust and include clear, proportionate and risk-based oversight, to maintain overall standards. For example, the RICS recently launched a Residential Retrofit Surveying (AssocRICS) pilot pathway, providing a route to increase professionalism and employment in the sector.[7]

Throughout the roundtable, participants emphasised the need to strengthen competence across the whole built environment workforce, to ensure broad understanding of retrofit measures and technologies, how these interact with wider building fabric and services, and how they

[6] Climate Change Committee, *A Net Zero Workforce* (May 2023).
[7] RICS, *Residential Retrofit Pilot Pathway Guide* (November 2025).

should be managed to maintain their efficacy across the building lifecycle. For example, something as common as the renovation of a bathroom could have a significant impact on the overall efficiency of a property, if it requires the lifting of loft insulation which is then not properly replaced. This highlights the need for robust education and CPD across the sector, not just among a self-selecting group of retrofit professionals.

Enabling innovation & economic growth

Participants noted that retrofit programmes offer significant potential to support British businesses and deliver economic growth through supply chains. While the UK's renewables sector is well advanced, many of the smaller-scale technologies central to delivering retrofit currently rely on global supply chains, with limited UK manufacturing or supply chain capacity. Sustained, long-term funding and consistent demand for retrofits can enable the development of domestic research, development and manufacturing capacity. This could both reduce costs for consumers and support economic growth.

The expansion of retrofit activity in a competitive market can also drive innovation. Attendees noted that many technologies, such as solar photovoltaics, have become significantly more efficient and cost-effective over recent decades, as the technology has scaled, and there is every reason to expect such improvements to be replicated across other technologies. A domestic market could drive improvements in key technologies such as heat pumps or batteries, but also in overall retrofit approaches – for example, finding new ways to deliver greater scale or embed circular economy approaches to reduce resource use.

Such innovation can be enabled by embedding detailed post-occupancy evaluation and monitoring into retrofit schemes, to allow for the identification of what works well and where improvements are needed to better meet consumer needs. As decarbonisation of buildings is a global challenge, these innovations can not only bring benefit to UK households, but can also be exported globally, further strengthening the UK economy.

From "warmer homes" to "better homes"

While some of the schemes within the Warm Homes Plan are flexible enough to support broader measures, the core focus of the Plan is, as the name suggests, on delivering homes which can be kept warm in more cost- and carbon-efficient ways. This includes through the delivery of fabric measures (primarily insulation), and low carbon heating systems (such as air- or ground-source heat pumps, heat networks or heat batteries). In some cases, this can be coupled with domestic electricity generation (e.g. rooftop solar photovoltaics) which can provide the operating power for a heat pump or heat battery.

These are all important steps, which will contribute to the overall ambition of homes which are easier, cheaper and cleaner to keep warm. However, as the heatwaves of summer 2026 have illustrated, it is increasingly essential to consider adaptation to a changing climate; the UK now needs to consider the risks posed by homes which are too hot, as well as those which are too cold. The Climate Change Committee estimates that over half of UK homes are already at risk of overheating, and that, without adaptation measures, this could rise to 92% by 2050 under a 2°C global warming, costing the economy as much as £7.6 billion per year.[8] Poor quality housing also poses other risks, such as damp and mould, noise pollution and poor air quality, and a focus on delivering warm homes in isolation can exacerbate all of these problems.

Attendees emphasised the value in addressing these emerging issues now, by expanding the scope of the Warm Homes Plan. There are a wide range of interventions which could be deployed. Passive measures include external window shading or shutters, which can be delivered in a minimally invasive way (helping to build trust in the retrofit sector), and urban greening, which delivers passive cooling and air quality benefits, and contributes to flood resilience, and mental wellbeing and placemaking. Active measures, such as mechanical ventilation or air conditioning, can deliver greater benefits, and may be a necessity for certain locations and building typologies, but are also more complex and

[8] Climate Change Committee, *A Well-Adapted UK* (May 2026).

costly to install, and have additional operating costs above passive measures.

Taking a holistic approach from the outset will mean that retrofits can be designed and delivered in a coherent, staged way, spreading out costs and minimising disruption, while ensuring that work does not need to be undone or altered at a later stage.

For example, while an air-to-water heat pump (which delivers heating and hot water), can often deliver a significant improvement in comfort, sustainability and energy costs, if a home is likely to need active cooling in future, it may make sense to plan for this and install an air-to-air heat pump (which can now be financed in part through the Boiler Upgrade Scheme). These are reversible systems, which can offer both heating in winter, and cooling in summer. An air-to-air heat pump may be most effective when coupled with a rooftop solar panel, which provides more electricity during the hottest part of the day, thereby significantly reducing the costs and of active cooling, while delivering substantial quality of life and health improvements over a heating-only system. However, these twin measures need not necessarily be installed at the same time, if this is not practical for the household. Instead, the solar panels could be installed first, giving an immediate benefit to the household and building trust in retrofit processes, with the heat pump installed later.

Shifting the framing of retrofit programmes also has the potential to build more support for retrofit at scale. While the UK public still overwhelmingly supports action to address climate change, the idea of achieving net zero, and some of the specific measures such as heat pumps, are increasingly contested and contentious. One attendee suggested shifting focus from "warmer homes" to "better homes", could help address this, allowing for a deeper consideration of the needs of current and future occupants, through holistic, design-led retrofits. Another attendee raised Octopus Energy's "zero bills homes" model, whereby homes which meet certain requirements for fabric performance and clean energy generation are guaranteed to have zero energy bills for ten years. This model shifts discussions from abstract ideas of "warmer" or even "better" homes, which may be hard to quantify, to something which is immediately clear and relatable for consumers.

Data-driven quality

To deliver high-quality, holistic retrofits, it is essential to fully understand how a home works. This requires high-quality, robust data and information about the building, its occupants, their current and future use cases, and any other key information.

While an Energy Performance Certificate (EPC) assessment may provide a starting point for understanding a building, these are often light-touch assessments, which are designed to be minimally invasive and therefore cannot provide the detailed understanding of a building's condition and use necessary to design an optimal retrofit. Attendees emphasised the importance of a detailed retrofit assessment as the first step in any retrofit; this can be seen as fulfilling stages 0 and 1 of the RIBA Plan of Work; identifying client requirements, setting the brief and defining outcomes accordingly. This should be separate to the design of the retrofit, which in turn, should be separate from installation (to avoid "gaming" the system).

Modern buildings with smart meters produce a wealth of data on energy usage, and this could be further enhanced through, for example, air quality meters or damp meters. Additionally, it is now a requirement to maintain a "Golden Thread" of building information for Higher-Risk Buildings (covering design, construction and operation) and CIAT recommends this as best practice for all buildings.

Such rich data sources can and should be incorporated into retrofit assessment and inform design decisions. However, care must be taken to responsibly manage and maintain data, and there remain questions as to who owns this data and how it is controlled. Attendees raised concerns that data collected to improve retrofit quality and outcomes, this data should not be used to penalise individuals whose homes are, for example, at increased risks of damp or flooding, through higher insurance premiums or energy standing charges, as this could compound inequalities. Property owners and occupiers must be supported to have control over the data generated by their homes, and clear standards around interoperability, access, consent, permitted uses, value capture and stewardship must be consistently applied.

Detailed data also supports continuous improvement and innovation in retrofit and across the wider sector. Any national retrofit programme should incorporate at least some degree of post-occupancy evaluation, delivered through random sampling (separate from quality assurance of individual installation). This should consider both quantitative data on energy use, temperature, air quality etc, but also qualitative data on the experiences of individual occupants and householders. Delivered at scale, this would provide an invaluable evidence base on how homes perform, which could underpin major new research and innovation. Post-occupancy evaluation should therefore be embedded within the core activity of the Warm Homes Agency once operational.

Participants noted the importance of data quality and maintenance. Inaccurate or incomplete data can make it harder to fully the property and how it works, undermining retrofit quality. On the other hand, accurate data and building information can inform not only immediate retrofits, but also future works, and can mean that, when a property changes hands, the new occupants have the information they need to get the best results from the systems installed in the building.

Putting people first

A clear through-line across these discussion themes is the need to put individual households at the centre of retrofits.

It is easy to think about retrofit in the abstract, considering what measures will make a building more energy efficient, improve ventilation or reduce CO_2 emissions. But retrofits are not dealing with abstract buildings. Rather, participants emphasised that they work with peoples' homes – the places they have built their lives (and for many, their most valuable assets). Retrofits are disruptive, complex, and in some cases, expensive (as the Warm Homes Plan cannot fully meet all retrofit costs). Therefore, people will only take them up if they are confident that the outcomes will be worthwhile.

Several mechanisms already touched on, such as stronger oversight of individuals involved in retrofit, or implementing smaller, less invasive measures first, can help to build trust and confidence and consumers. However, these are only part of the solution.

Many retrofit technologies are not yet widely deployed across the UK, and most consumers lack first-hand experience of how these technologies work. They may therefore be reluctant to consider installing them, even where significant financial support is available. Additionally, many consumers will be unaware that financial support is available. Large-scale promotion and education will therefore be vital to boost retrofit awareness, interest, and uptake among consumers, particularly in the earlier phases of a nationwide retrofit programme. This should focus on the holistic benefits of retrofits for households and communities, while avoiding jargon. It should also celebrate what works well, to counter previous negative messaging.

However, it is vital that retrofit is not something which is "done to" people by national government, as that will not be conducive to support. Instead, promotion, like delivery, should be locally led. Attendees noted the value of neighbourhood forums to build support across the community. Trusted local advocates can also help to reach excluded groups. Education should extend across the population, rather than just being limited to those directly benefitting from a given retrofit. This will help build trust and confidence, and ensure that, where properties change hands, new households can continue to get the best outcomes from retrofits.

One potential way to build confidence in retrofit would be to enable households to experience new technologies first hard, for example by visiting model homes or examples of successful retrofits (though participants noted that these may be less effective if they are seen as a sales pitch). Over time, as more people see the benefits such improvements, it is reasonable to expect that interest will grow organically, and there will be reduced need for direct promotion and demonstration of retrofit technologies, but some of this work will need to be sustained for the long term.

Retrofit programmes must also be designed with fairness built in. Government is clear that it wants to target the worst performing homes first, to give the greatest benefits to the public and to have the largest impacts on heating costs and energy use. However, some

properties in the UK are of such poor-quality that it will not be economically viable to bring them up to a decent level of performance using existing technologies. Where it is likely that innovation and improved technologies could unlock currently unviable retrofits, Government should plan for this, taking a staged approach which delays making those interventions where improvements are expected, while moving forward with other measures. Importantly this should be coupled with support for the individual households involved, to ensure that those living in the very worst homes, which are hardest to retrofit, are not further disadvantaged.

Nonetheless, even with future innovations, some retrofits will remain unviable. In these cases, there is a significant risk of "stranded assets", where property owners – whether individual homeowners, commercial or social landlords – have invested significant resources to acquire a property (or properties), which cannot be brought up to modern standards, and therefore lose their value. Government will need to consider how to manage these stranded assets, to ensure a just transition, and avoid entrenching inequalities.

Conclusions

The roundtable did not set out to develop specific policy recommendations for government or the sector, being instead exploratory in nature. However, it is possible to point to a small number of recommendations which emerged from the themes of discussion.

1. To ensure quality and rebuild consumer confidence, Warm Homes Plan schemes should clearly separate retrofit assessment, design and installation activity. Future schemes should place a greater emphasis on independent design expertise.
2. Where possible, delivery of retrofit measures should be implemented at a level which considers the unique fabric of a building or group of buildings while also delivery economies of scale – such as a single terrace or multi-property development.
3. TrustMark should make adequate insurance and ongoing CPD requirements for registration for individuals delivering government funded schemes.
4. Government should deliver long-term funding certainty, supporting investment in the retrofit workforce, and in green skills across the built environment sector.
5. Government should seek to minimise the planning and regulatory barriers to the installation of minimally invasive retrofit measures, such as external shading.
6. Future retrofit programmes should place a greater emphasis on holistic improvements in home quality, rather than focusing primarily on warmth.
7. Robust, programme level post-occupancy evaluation should be embedded within the Warm Homes Plan to support continuous quality improvement and future innovation.
8. Local and national government, the built environment sector and trusted local advocates should coordinate education and promotional activity to build support for, and confidence in retrofit.

As the Government looks to distribute nearly £15 billion, there are a wide range of issues they will need to address. A two-hour roundtable can, of course, only scratch the surface of these issues, but across the sector, there is a clear commitment to working collaboratively to make retrofit work for the UK. CIAT, RIBA and the RICS looks forward to continuing these conversations with government and sector partners in the months and years ahead.

Roundtable Participants

- *Lee Dillon MP, Chair*
- *Gideon Amos MP, Liberal Democrats Housing Spokesperson*
- *Usman Yaqub, CIAT President*
- *Matthew Morris, CIAT Climate Society Chair*
- *Chris Williamson, RIBA President*
- *Steve Lees, RICS representative*
- *Jack Fleming, CIAT Policy & Public Affairs Manager (observer)*
- *Bertie Bextor, Office of Lee Dillon MP (observer)*

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